# *Overseas Travel Advice*

***2.0 Contact Hours***

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# Overseas Travel Advice

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**Objectives:**

1. List some of the items that should be covered when performing a pre-travel assessment for your patient planning a trip overseas.
2. List the travel documents which are required and which are recommended when traveling overseas.
3. List the items which should be included in a minor-emergency travel kit.
4. List the best methods of preventing traveler's diarrhea.

**Introduction**

When one of your patients comes to you and tells you they are planning to travel overseas, the best way to insure a carefree and relaxing trip is to prevent problems before they happen. The more that you, as the clinician, learn about passports, visas, customs, immunizations, and other travel basics, the less likely your patient is going to have difficulties on the road. Preparations should begin well in advance because if, for example, immunizations are needed, it can take weeks or even months to be brought up-to-date.

**Pre-travel Counseling**

Travelers should learn about the local customs, sanitary conditions, weather, and medical resources available prior to departure. They should know how to contact the nearest American Embassy for assistance if needed. Differences in electrical power sources can be important if they need to take medical equipment on the trip; the electric current and socket design in many countries are different than that in the United States.

Inform your patients that good resources to obtain information are from travel agents, the local book store and the local public library. Travel advisories can be obtained from the Department of State for any country you decide to visit by calling 888.407.4747, or if outside of the United States, 202.647.5225. Many countries have consulates in major U.S. cities; addresses and telephone numbers can be found in the telephone book or on the Internet.

Travel document requirements vary from country to country, but your patient will need, at a minimum, the following: a passport or other proof of citizenship plus a visa or a tourist card. They may also have to prove that they have enough money for their trip and/or have ongoing or return tickets.

A U.S. citizen needs a passport to depart or enter the United States and to enter or depart most foreign countries. Exceptions include short-term travel between the United States and Mexico, Canada, and some countries in the Caribbean. The travel agent or airline can inform your patient if a passport is needed for the country they plan to visit. Keep in mind that even if an individual is not required to have a passport to visit a country, U.S. Immigration requires proof of U.S. citizenship and identity when one reenters the United States. A U.S. passport is the best proof of citizenship. Other documents that can be used to prove citizenship include an expired U.S. passport, a certified copy of a birth certificate, a Certificate of Naturalization, a Certificate of Citizenship, or a Report of Birth Abroad of a Citizen of the United States. Either a valid driver's license or a government identification card that includes a photo is adequate to prove one's identity.

A visa is a stamp placed in the passport by a foreign government that permits a person to visit that country for a specified purpose and a limited time. It is advisable to obtain visas before leaving the United States because it may be difficult to obtain visas once your patient has departed. Apply directly to the embassy or nearest consulate of each country you plan to visit, or consult with your travel agent. Department of State publication M-264, *Foreign Entry Requirements*, gives entry requirements for every country and tells where and how to apply for visas. If your clinic or facility provides emigration or travel-

medicine services, a supply of these forms can be ordered from the Consumer Information Center, Pueblo, CO 81009.

If your patient has a pre-existing medical condition, provide a letter describing the condition(s). This letter should contain a list of medications (including the generic names) that should be taken. If traveling to a country where the English language is not predominate, tell your patient to have the letter translated into the native language by a certified translator. The consulate or embassy of the country to which the patient is traveling should be able to help obtain a certified translation of the letter. Advise your patient to keep their medications in their original, labeled containers; this will make customs processing easier. To ensure your patient does not violate the drug laws of the countries which are being visited, have them consult the embassy or consulate for precise information before they leave the United States. If your patient has allergies or any other unusual medical problems, advise them to wear a medical alert bracelet.

**Traveling with children**

If your patient plans on traveling with children, special precautions need to be taken. Although infants and children make up only 4% of all international travelers, they account for 25% of travel-related hospitalizations;[1] therefore, all family members should be covered by travel insurance. Accidents are the leading cause of mortality in young travelers.[2] Advise patients to check the coverage provided for by their regular health plans for international travel; if the health plans lack this coverage, supplemental travel and evacuation insurance should be purchased because costs of evacuation from another country back to the United States can be astronomical.[3]

If the child is traveling with one parent, the traveling parent must have a notarized letter of permission from the nonaccompanying parent. If the accompanying parent has custody or is a widow or widower, a notarized copy of the custody order or death certificate may be required.[4]

Air travel for infants younger than two weeks is not recommended because of the possibility of surfactant deficiency in the lungs; this can lead to alveolar collapse and pneumothorax. The Centers for Disease Control and Prevention does not recommend air travel for infants younger than six weeks.[5] Barotrauma resulting from descent of the aircraft can cause ear pain in children. The eustachian tubes can be decompressed by breast- or bottle-feeding infants and by having older children chew gum or blow up a balloon.[3]

Insect avoidance is paramount for children. Prophylactic antimalarial medications are designed to protect against malaria, but not most other insect borne vectors. Recommend to your patient that the children wear light-colored, long-sleeved shirts, long pants, socks and shoes. The family should also sleep in screened quarters, with additional mosquito netting placed around the bed.[3] Insect repellents with DEET (N,N-diethyl-3-methylbenzamide) at a concentration of 30% to 35% are safe and effective for infants and children.[6] Permethrin applied to children's clothing lasts several weeks, even with washing, and is effective against mosquitoes and ticks.[3] The children should shower or bathe at the end of each day to remove any residual permethrin that may be on their skin.

The highest incidence of rabies worldwide is in children;[7] therefore, it is important to keep children away from animals during overseas travel. Recommend pre-exposure vaccination for families planning to stay in an area at risk for more than 30 days.[5] If a child is bitten, scratched or has been licked by an animal in the area of a break in the skin, the area should be scrubbed with soap and water, and should be seen by a clinician as soon as possible. If a patient contracts rabies, the outcome is grim.

The following is a list of supplies and medications a parent should take on their trip to manage minor emergencies involving their children. These items should be kept together in a small travel kit:

- Prescription medications (a letter from the clinician should be included if controlled substances or needles/syringes are in the kit)

- Ibuprofen or acetaminophen
- Diphenhydramine
- DEET-based insect repellent
- Permethrin
- Diaper rash ointment or cream
- 10% povidone iodine (disinfectant)
- Elastic bandages, dressings and band aides
- Oral rehydration salts
- Prophylactic medications for motion sickness, malaria and traveler's diarrhea
- Sunscreen
- Thermometer
- Tweezers and scissors

Adapted from Mathur A, Kamat D. Travel risks: How to help parents protect infants and young children. *Consultant*. 2005;45(8):900-904.

**Traveler's diarrhea**

Of the 50 million people that cross international borders each year, 20 million will be affected with diarrhea.[8] Traveler's diarrhea may be associated with nausea, vomiting, abdominal cramps, headache, low-grade fever, and a general run-down feeling. Risks by destination are as follows:

- Low (5% to 10%): North America, northern and central Europe, and certain Caribbean islands.
- Medium (15% to 20%): Mediterranean region, southern Italy, Greece, and Israel.
- High (30% to 50%): Parts of Mexico, South America, Africa, and Asia

The major cause of traveler's diarrhea is food,[9] with water and ice being the next most common.[10] Particularly high-risk foods include moist items served at room temperature, such as salads, buffet items and fruits that have not been peeled. Low-risk foods include recently cooked meals, hot coffee or tea, dry foods such as bread (without butter or spreads), foods which can be peeled and foods with a high sugar content. Carbonated bottled drinks, soft drinks and beer should be considered safe. Bottled water, *with the cap seal intact*, can be considered safe.[11]

Antibiotic prophylaxis for traveler's diarrhea is not recommended by the Centers for Disease Control and Prevention (CDC) even for high-risk travelers because it can lead to drug-resistant organisms and may give travelers a false sense of security;[12] however, some clinicians provide a five-day course of antibiotics for use in the event diarrhea develops and interferes with the patient's travel itinerary. Prophylaxis with fluoroquinolones is up to 90 percent effective.[13] Bismuth subsalicylate (Pepto-Bismol©) provides a rate of protection of about 60 percent against traveler's diarrhea; however, it is not recommended for persons taking anticoagulants or other salicylates. Because bismuth subsalicylate interferes with the absorption of doxycycline, it should not be taken by travelers using doxycycline for malaria prophylaxis. Travelers should be warned about possible, reversible side effects of bismuth subsalicylate, such as a black tongue, dark stools and tinnitus.[14]

Probiotics are a more natural approach to prophylaxis of traveler's diarrhea. Probiotics colonize the gastrointestinal tract and theoretically prevent pathogenic organisms from infecting the gut. Studies of Lactobacillus GG (Culturelle©) have suggested protection rates of up to 47 percent. More studies are needed to confirm the efficacy of probiotic prophylaxis.[12]

**Immunizations**

Ideally, your patient should see you several months prior to departure. At a minimum, the patient should have the follow immunization:[15]

- Mumps, measles and rubella (MMR)
- Diphtheria
- Tetanus
- Pertussis
- Poliomyelitis
- Meningococcal
- Pneumococcal
- Hepatitis A and B
- *Hemophilus influenza* type b
- Human papilloma
- Varicella

Measles infects more than 20 million people and kills more than 300,000 people worldwide annually. Diphtheria and tetanus toxoid boosters are indicated every ten years for adults in the United States; travelers to an area with low immunization rates may be exposed to these potentially fatal diseases.[15] To determine if your patients are fully protected and up-to-date on their required immunizations, the Centers for Disease Control and Prevention has a web site with current recommendations which is available at http://wwwn.cdc.gov/travel/yellowBookCh1-GenRecVaccination.aspx (Accessed February 29, 2008). Some diseases, such as Japanese encephalitis, typhoid and yellow fever are present only outside of the United States, so vaccines for these diseases may need to be specially ordered.

**Malaria**

Each year 350-500 million cases of malaria occur worldwide, and over one million people die, most of them young children in sub-Saharan Africa.[16] The incubation period following the infective bite by the *Anopheles* mosquito varies from 7 to 30 days. The shorter periods are observed most frequently with *Plasmodium falciparum* and the longer periods with *P. malariae*. Antimalarial drugs taken for prophylaxis by travelers can delay the appearance of malaria symptoms by weeks or months, long after the traveler has left the malaria-endemic area. Such long delays between exposure and development of symptoms can result in misdiagnosis or delayed diagnosis because of reduced clinical suspicion by the health-care provider. Returned travelers should always be asked if they have been to any malaria-risk areas during the previous 12 months.[16]

The life cycle of the parasite is complicated and involves two hosts - humans and *Anopheles* mosquitoes. The disease is transmitted to humans when an infected *Anopheles* mosquito bites a person and injects the malaria parasites (sporozoites) into the blood. Sporozoites travel through the bloodstream to the liver where they mature and eventually infect the human red blood cells. While in red blood cells, the parasites again develop until a mosquito takes a blood meal from an infected human and ingests human red blood cells containing the parasites. When the parasites reach the *Anopheles* mosquito's stomach they invade the mosquito salivary glands. When a mosquito bites a human, these sporozoites complete and repeat the complex life cycle.[17]

Signs and symptoms of malaria vary from almost asymptomatic to fulminate disease associated with multi-organ failure.

Mild malaria attacks can last from six-to-ten hours and usually follows the following pattern:

- A cold stage, associated with shivering
- A hot stage, associated with headaches, fevers, vomiting and seizures in children

- A sweating stage, associated with diaphoresis, a return to normal temperature and a felling of fatigue

Care must be taken in countries where malaria is rarely seen; such symptoms can easily be confused with the onset of influenza. This is why it is imperative that any patient presenting with these symptoms be asked if they had recently been to any areas of the world where malaria is prevalent.[16]

Severe malaria attacks are associated with severe organ failure and/or abnormalities in the patient's blood. Severe malaria is usually associated with the following:

- Cerebral edema, with associated impairment of consciousness, seizures and coma
- Hemolysis leading to anemia and hemoglobinuria
- Pulmonary edema or acute respiratory syndrome (ARDS)
- Thrombocytopenia
- Cardiovascular collapse
- Shock
- Kidney failure
- Hypoglycemia
- Premature delivery in pregnant patients
- Splenic involvement with possible rupture of the organ

Severe malaria occurs most often in patients who have no immunity to malaria.[16]

Diagnosis of malaria depends on the demonstration of parasites on a blood smear examined under a microscope. In *P. falciparum* malaria, additional laboratory findings may include mild anemia, thrombocytopenia, elevation of bilirubin, elevation of aminotransferases, albuminuria, and urinary casts.

Primary prevention includes limiting non-urban outdoor activities, especially when mosquitoes are most active. Protection from mosquito bites with clothing and repellents is essential; long-sleeved shirts and pants are the best protection. Repellent containing 20% to 35% DEET should be used. Spray repellent should be used on thin clothing. Mosquito netting should be used over the bed if the room is not screened or air-conditioned. For travelers in high-risk areas, and especially those unable to avoid exposure, medications used to prevent malaria should be prescribed.

A number of medications have been approved for chemoprophylaxis against malaria; however, before any of these medications are prescribed, the CDC should be contacted because there are certain areas of the world where malaria is resistant to one-or-more of these medications. Also, these medications are not without side effects, so consultation with a specialist in malaria prevention and treatment should be consulted before prescribing these medications:

- Malarone is a combination of two drugs, atavoquone and proguanil. Malarone should be started one-to-two days before travel begins to a malarial area, taken daily at the same time each day and daily for seven days after leaving the malarial area
- Doxycycline, a common antibiotic, should be started one-to-two days before travel begins to a malarial area, taken daily at the same time each day and for four weeks after leaving the malarial area. Because doxyclycline is a tetracycline drug, it should not be given to pregnant women or to children
- Mefloquine prophylaxis should begin one-to-two weeks before travel to malarious areas. It should be continued once a week, on the same day of the week, during travel in malarious areas and for four weeks after a traveler leaves such areas
- Primaquine may be used after consultation through the CDC's malaria hotline at 770.488.7788. Primaquine is usually reserved for travelers unable to take any of the above medication

## Conclusion

A thorough history and physical should be conducted for any patient considering travel overseas. Consultation with a specialist in travel medicine should be considered if the clinician is not familiar with the precautionary recommendations for a patient traveling to an area in which the clinician is unfamiliar.

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